

REMARKS

Claims 1-6 have been canceled. New claims 7-16 have been added. It should be appreciated that the new claims merely clarify the invention and do not add new matter. Claims 7-16 remain in the application.

Claims 1-6 were rejected under 35 U.S.C. §102(b) as being anticipated by Schifferl (4,889,101). The Applicant respectfully traverses this rejection.

U.S. Patent Number 4,889,101 discloses an arrangement for calculating the fuel injection amount for an internal combustion engine. The system includes an air mass meter having a bridge circuit 1, measuring circuit 2, power supply 3, heated sensor 11 and air intake temperature sensor 12. The system also includes a control device that calculates the fuel injection amount for the engine using the output signal of the air mass meter and a tachometer 4. The system also includes an ignition switch 5 that controls the on/off operation of the controller 6. The system further includes a check part 61 in the control device that receives an output signal from the tachometer and disconnects the power supply of the air mass meter when the rpm of the engine falls below the starting rpm of the engine, and does not reengage the power supply until this threshold is reached again. In operation, when the engine rpm falls below the starting rpm of the engine, the power supply to the air mass meter is shut off until the engine rpm exceeds the starting rpm of the engine. Schifferl '101 does not utilize the conductance of the air/fuel sensor heater to determine how long the engine has been shut off prior to starting of the engine.

In contradistinction, new claim 16 discloses a system for controlling an amount of fuel to be delivered to an engine at restart. The system includes an air/fuel sensor heater, an engine parameter sensing means and a fuel injection means. The system further includes a controller in communication with fuel injection system. Claim 7 discloses a method for controlling an

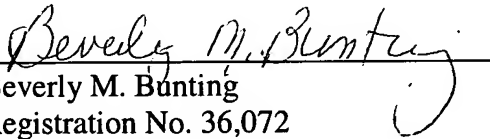
amount of fuel delivered to an engine upon start. The method includes the steps of measuring a conductance of the air/fuel sensor heater and sensing an engine operating parameter using the sensing means. The method also includes the steps of using the measured conductance of the air/fuel sensor heater and sensed engine operating parameter to determine a length of time the engine was shut off by the controller. The method further includes the steps of determining a corrected amount of fuel to be delivered to the engine using the length of time the engine was shut off and delivering the corrected amount of fuel to the engine by the fuel injection system when the engine is started. Claim 12 is similar to claim 7 and includes further limitations.

Schifferl '101 does not disclose anticipate or otherwise suggest the system and method of claims 7, 12 or 16. Schifferl merely discloses a system that senses when engine rpm falls below the engine start rpm and shuts off power to the air mass sensor when the engine rpm falls below the engine start rpm. Schifferl '101 does not disclose a system and method that measures the conductance of the air/fuel sensor heater and uses the conductance in determining how long the engine was shut off and corrects the amount of fuel delivered by the fuel injection system at engine start based on the amount of time the engine was off. The steps of sensing engine rpm and shutting off the power to the air/flow sensor at engine shutdown when the engine rpm is below the an engine start rpm, is clearly not the same step as measuring the conductance of the air fuel sensor heater to determine how long the engine was off and correcting fuel delivery based on this amount of time at engine start. There is no writing in the disclosure of Schifferl regarding the use of the air/fuel mass sensor conductance to determine how long the engine has been shut off. Further, there is no writing in Schifferl regarding use of the amount of time the engine has been shut off in order to correct fuel delivery.

As such, Schifferl teaches away from the present invention, since Schifferl measures engine rpm to make sure the engine is turned off and shuts off the power to the air mass meter at the time the engine is shut off. The Applicant's invention measures the conductance of the air/fuel sensor heater at the time the engine is turned on and corrects the fuel delivery accordingly.

Therefore, it is respectfully submitted that claims 7, 12 and 16 and the claims dependent therefrom are in a condition for allowance, which allowance is respectfully solicited. If the Examiner finds to the contrary, it is respectfully requested that the undersigned in charge of this application be called at the telephone number given below to resolve any remaining issues.

Respectfully submitted,


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